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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,077	07/08/2003	Steven C. Johnson	10017415-1	7949
22879	7590	02/02/2005	EXAMINER NGUYEN, DANG T	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			ART UNIT 2824	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/615,077	JOHNSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dang T Nguyen	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-44 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-9 and 36-44 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 10, 11, and 15-35 is/are rejected.
- 7) ☒ Claim(s) 3, 4 and 12-14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Search history</u> .                   |

***Response to Arguments***

1. Applicant's arguments with respect to claims 1, 5, 10, 30, 32 – 36, 41 and 42 have been considered but claims 1, 10, 30 - 35 are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1, 2, 10, 11, 15, 18, 21, 24, 30-32, and 34 are rejected under 35**

**U.S.C. 102(b) as being anticipated by Bergemont U.S. Patent No. 5,212,541 – Date of Patent: May 18, 1993.**

**Regarding independent claim 1**, Fig. 6 of Bergemont discloses a system comprising: a high-density non-volatile fast memory (Col. 1 lines 15 – 20) having no erasing circuitry (Col. 1 lines 23 – 25 of Bergemont discloses erasing data in a nonvolatile memory by expose the memory to and ultraviolet light. Therefore no erasing circuitry for the memory is discloses by Bergemont); and an ultraviolet light window adapted (Col. 1 lines 25–27 “Transparent Lid”) to expose the high-density non-volatile fast memory to UV light (Col. 1 lines 23–25).

**Regarding dependent claim 2**, Bergemont discloses wherein the high-density non-volatile fast memory comprises a modified (Col. 1 line 22 discloses “reprogrammed”

of EPROM) flash memory (Col. 4 lines 24) having no erasing circuitry (Col. 1 line 23-25).

**Regarding independent claim 10**, Fig. 6 of Bergemont discloses a system comprising: modified flash cells (Col. 1 line 22 discloses “reprogrammed” of EPROM) having no erasing circuitry (Col. 1 lines 23–25 of Bergemont discloses erasing data in a nonvolatile memory by expose the memory to and ultraviolet light. Therefore no erasing circuitry for the memory is discloses by Bergemont); and an ultraviolet light window (Col. 1 lines 25–27 “Transparent Lid”) adapted to expose the modified flash cells to UV light (Col. 1 lines 23–25).

**Regarding dependent claim 11**, Bergemont discloses wherein the UV light window is located above a control gate of the modified flash cells (Hence the memory is formed by control gate, drain and terminal as discloses in Fig. 2, and on Col. 1 lines 25–27 discloses “transparent Lid” is on the package of the memory. Therefore the “Transparent Lid” must be above on top the control gate of the memory).

**Regarding dependent claim 15**, Bergemont discloses wherein the UV light window is adapted to diffuse UV light entering the UV light window (This is inherent to “Transparent Lid” taught by Bergemont: because diffusing is a intrinsic characteristic of any transparent material which is exposing to the light).

**Regarding dependent claim 18**, Bergemont discloses wherein the modified flash cells are configured as a two-dimensional planar matrix of cells (Fig. 6 discloses two-dimension planar matrix of Fig. 2).

**Regarding dependent claim 21**, Bergemont discloses wherein the modified flash cells are configured as three-dimensional layers (Fig. 4A, 4B, 4C [34, 22a, 28]).

**Regarding dependent claim 24**, Bergemont further discloses an electronic device adapted to house the modified flash cells (Col. 1 line 26 discloses “package EPROM chip” is an portable electronic device for housing multiples flash memory cells), the electronic device having an opening to receive the UV light window (Col. 1 line 25 discloses “UV transparent Lid”).

**Regarding independent claim 30**, Col. 1 lines 23–27 of Bergemont discloses a method comprising: exposing a high-density non-volatile fast memory to ultraviolet light (Col. 1 lines 23–24); and erasing the high-density non-volatile fast memory using the UV light (Col. 1 lines 24–27) without the use of any erasing circuitry (Col. 1 lines 23–27, Bergemont teaches erasing data in a nonvolatile memory by expose the memory to and ultraviolet light; Therefore, no erasing circuitry for the memory is discloses by Bergemont).

**Regarding dependent claim 31**, Bergemont further comprising: passing light through a UV light window (Col. 1 line 25 “Transparent Lid”).

**Regarding independent claims 32 and 34**, Fig. 6 of Bergemont discloses a method comprising: means for exposing a modified flash cell to ultraviolet (UV) light (Col. 1 lines 15 – 25), and means for erasing the modified flash cell using the UV light without the use of any erasing circuitry (Col. 1 lines 23 – 25 of Bergemont discloses erasing data in a nonvolatile memory by expose the memory to and ultraviolet light. Therefore no erasing circuitry for the memory is discloses by Bergemont).

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 33 and 35 are rejected under 35 U.S.C. 102(e) as being anticipated by Jeng, U.S. Patent No. 6,740,927 B1 – filed Jan. 6, 2003.**

**Regarding independent claims 33 and 35,** Jeng discloses a method comprising: means for installing ultraviolet (UV) windows onto portable electronic devices (Col. 1 lines 24-30); passing UV light through the UV windows (Col. 7 lines 38-40) and means for erasing the non-volatile memory by exposing the non-volatile memory to the UV light through the UV light windows without the use of any erasing circuitry (Col. 7 lines 35-45).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 16-17, 19-20, and 22-23, are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont U.S. Patent Non 5,212,541 in view of Wu, Pub. No. US 2003/0146465 A1 – Pub. Date: Aug. 7, 2003.**

**Regarding dependent claims 16, 17, 19, and 20,** Bergemont as applied to claims 10 and 18 above, fails to disclose the two-dimensional planar matrix of cells is a NAND and a NOR configuration.

Wu discloses a gate structure having a configuration of NAND and NOR type (Page 1, paragraph [0004]).

Bergemont and Wu are common subject matter for flash memory. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated Wu's NAND and NOR type into Bergemont's matrix for the purpose of using NAND type for having very high parasitic capacitances between the select-gate (word) line and control-gate line, and using NOR type for obtaining high speed programming (page 1 paragraph [0004]).

**Regarding dependent claims 22-23,** Bergemont as applied to claim 21 above, fails to disclose the three dimension layers comprise flash cells in a NAND and a NOR configuration.

Wu discloses a gate structure having a configuration of NAND and NOR type (Page 1, paragraph [0004]).

Bergemont and Wu are common subject matter for flash memory. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated Wu's NAND and NOR type into Bergemont's matrix for the

purpose of using NAND type for having very high parasitic capacitances between the select-gate (word) line and control-gate line, and using NOR type for obtaining high speed programming (page 1 paragraph [0004]).

**Claims 25-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bergemont U.S. patent No. 5,212,541 in view of Lin, Pub. No. US 2003/0064564 A1 – Pub. Date: Apr. 3, 2003.**

Bergemont as applied to claim 24 above, disclosed every aspect of applicant's claimed invention except for wherein the electronic device is a portable electronic device, a cellular telephone, a personal digital assistant (PDA), an MP3 player, and a lap-top computer.

Lin discloses the portable electronic device is a portable electronic device, a cellular telephone, a personal digital assistant (PDA), an MP3 player, and a lap-top computer (Page 1, paragraph [0004] lines 17-23).

Bergemont and Lin are common subject matter for flash memory cell. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporated Lin's portable electronic device into Bergemont's flash cell, since Lin taught the benefit by pointing out that portability of these electrical consumer product is strongly prioritized by consumers, the products' size must be minimal (Page 1, paragraph [0004] lines 21-23).



***Allowable Subject Matter***

5. Claims 3, 4, 12, 13, and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**With respect to claim 3**, in addition to other elements in the respective claim, the prior art does not teach or suggest “the high-density non-volatile fast memory comprises a two-terminal drain-gate-connected modified flash cell having no erasing circuitry”.

**With respect to claim 12**, in addition to other elements in the respective claim, the prior art does not teach or suggest “wherein the UV light window is located below a substrate of the modified flash cells”.

**With respect to claim 13**, in addition to other elements in the respective claim, the prior art does not teach or suggest “wherein the UV light window is interposed between control gates of the modified flash cells”.

**With respect to claim 14**, in addition to other elements in the respective claim, the prior art does not teach or suggest “wherein the UV light window is offset from control gates of the modified flash cells”.

6. Claims 5–9 and 36–44 are allowed.

The following is an examiner’s statement of reasons for allowance:

**With respect to claims 5 and 36**, in addition to other elements in the respective claim, the prior art does not teach or suggest “a memory device having two-terminal drain-gate-connected modified flash cells having no erasing circuitry”.

**With respect to claims 41 and 43**, in addition to other elements in the respective claim, the prior art does not teach or suggest "a nonvolatile memory device having the ultraviolet light window is located below a substrate of the memory"

***Prior art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Frerichs	Patent No. US 6,690,057 B1	Date of Patent: Feb. 10, 2004
Makoto	Document-ID : JP 03070172	PUBN - Date: Mar. 26, 1991
Liu et al.	Patent No. US 6,580,630 B1	Date of Patent: Jun. 17, 2003

***Contact Information***

8. Any inquiry concerning this communication from the examiner should be directed to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the

patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC@uspto.gov](mailto:EBC@uspto.gov).

Dang Nguyen 1/25/2005

The finality of the previous  
office action is withdrawn.

A handwritten signature in black ink, appearing to be 'Richard Elms', with a date '1/28/05' written over it.

RICHARD ELMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800